FIG. 1

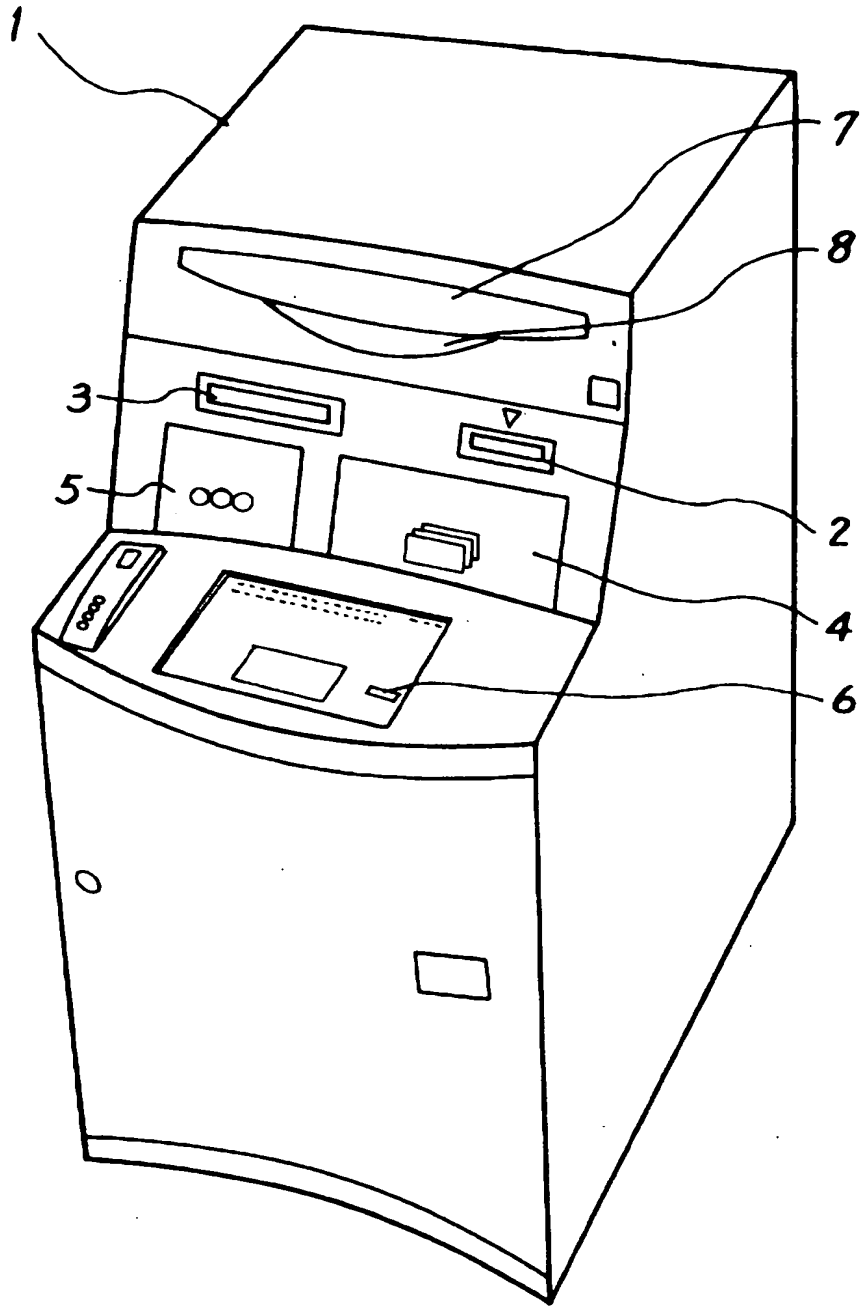


FIG. 2

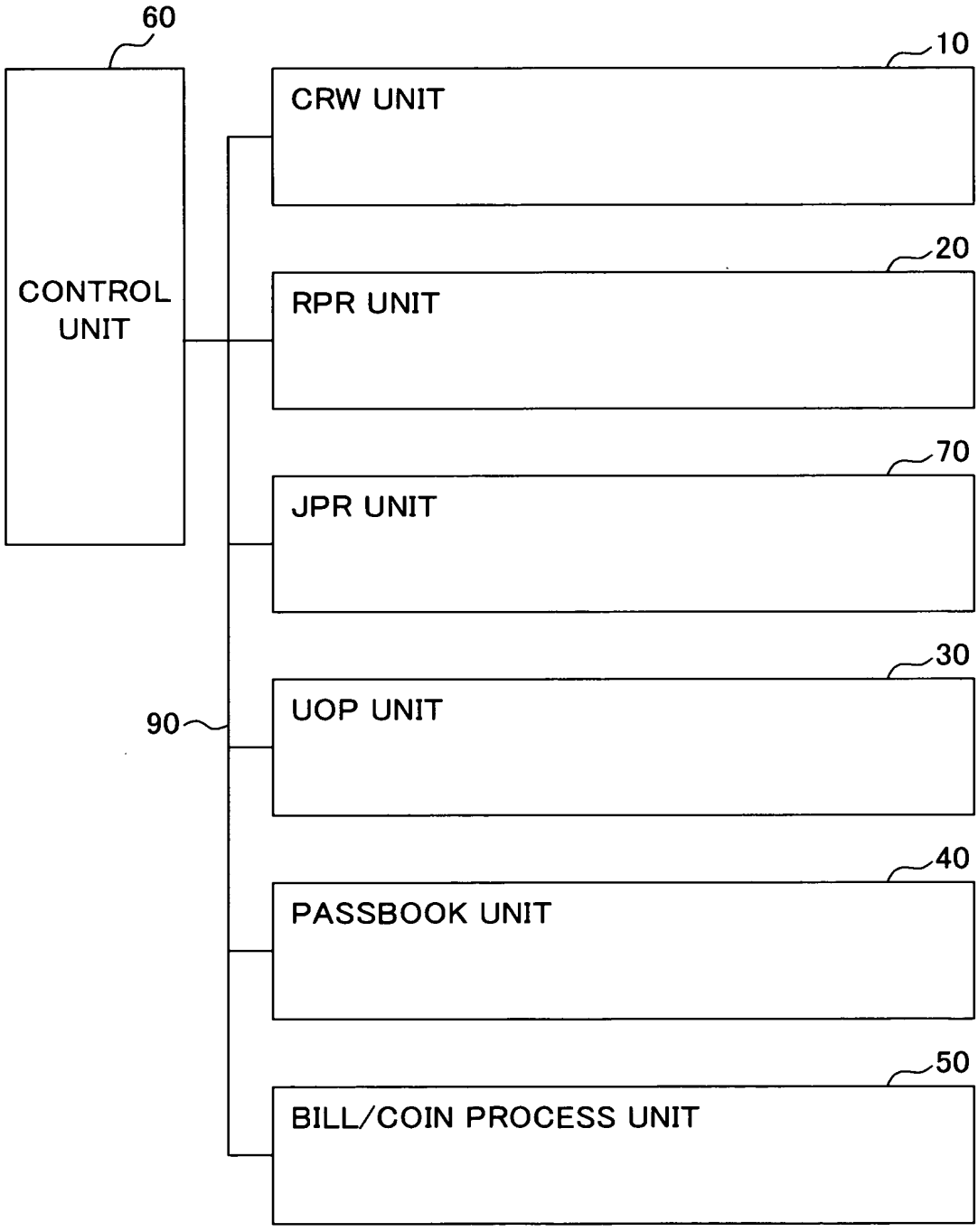

60
CONTROL UNIT
10
CRW UNIT
20
RPR UNIT
70
JPR UNIT
90
30
UOP UNIT
40
PASSBOOK UNIT
50
BILL/COIN PROCESS UNIT

FIG. 3

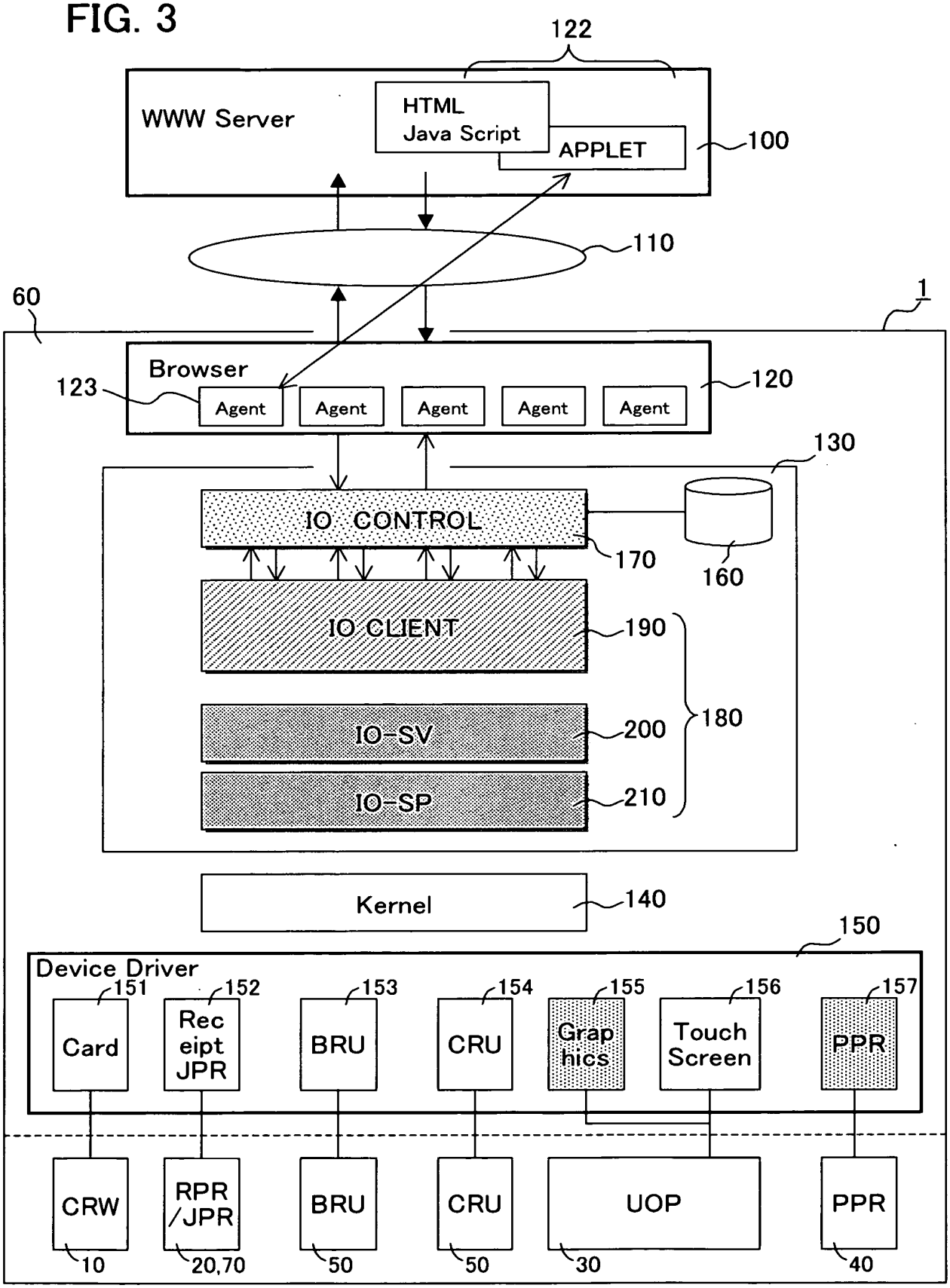

122
WWW Server
HTML
Java Script
APPLET
100
110
60
1
Browser
123
Agent
Agent
Agent
Agent
Agent
120
130
IO CONTROL
170
160
IO CLIENT
190
180
IO-SV
200
IO-SP
210
Kernel
140
150
Device Driver
151
152
153
154
155
156
157
Card
Rec eipt JPR
BRU
CRU
Grap hics
Touch Screen
PPR
CRW
RPR /JPR
BRU
CRU
UOP
PPR
10
20,70
50
50
30
40

FIG. 4

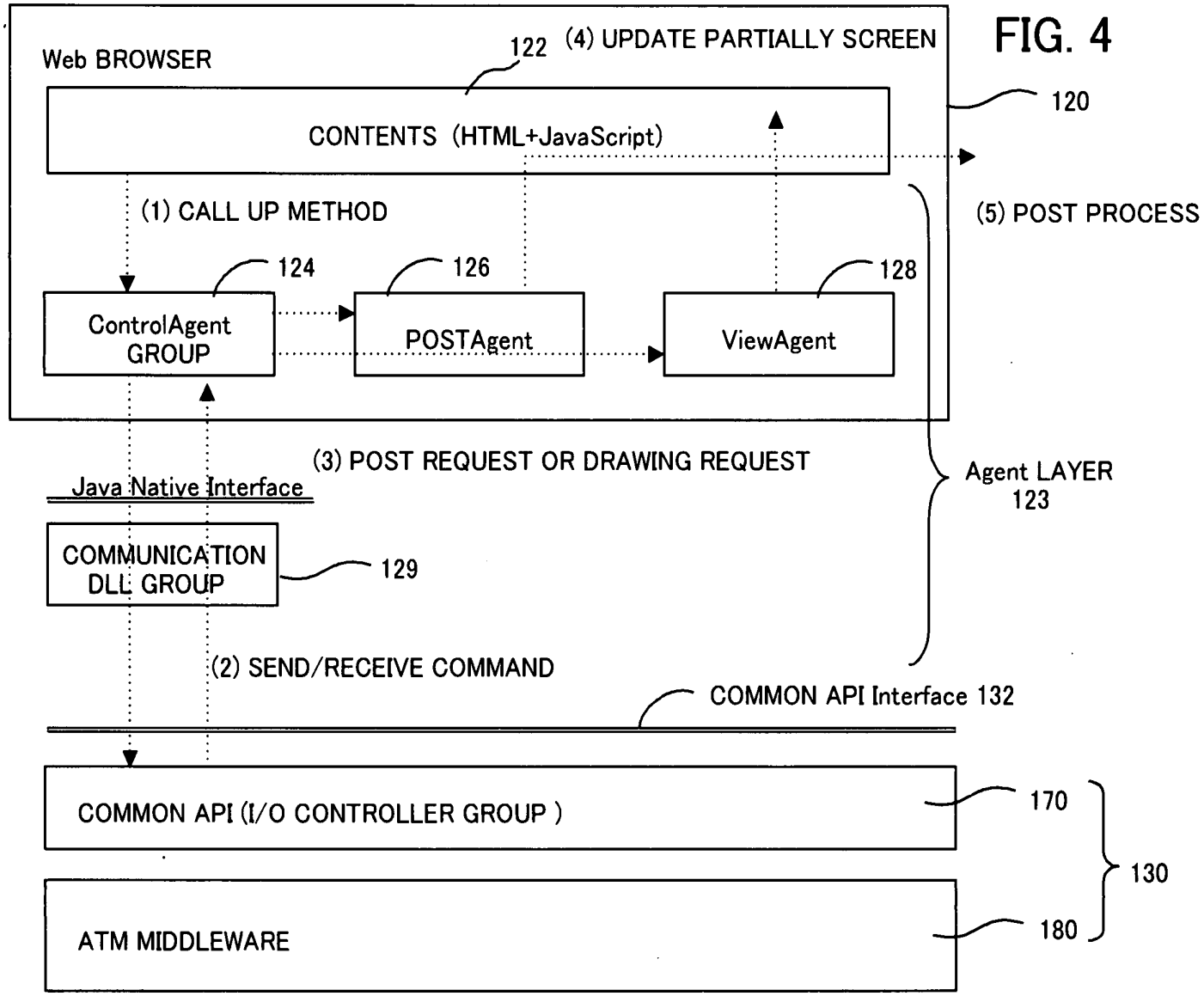

Web BROWSER
122
(4) UPDATE PARTIALLY SCREEN
120
CONTENTS (HTML+JavaScript)
(1) CALL UP METHOD
(5) POST PROCESS
124
126
128
ControlAgent GROUP
POSTAgent
ViewAgent
(3) POST REQUEST OR DRAWING REQUEST
Agent LAYER 123
Java Native Interface
COMMUNICATION DLL GROUP
129
(2) SEND/RECEIVE COMMAND
COMMON API Interface 132
COMMON API (I/O CONTROLLER GROUP)
170
130
ATM MIDDLEWARE
180

FIG. 5

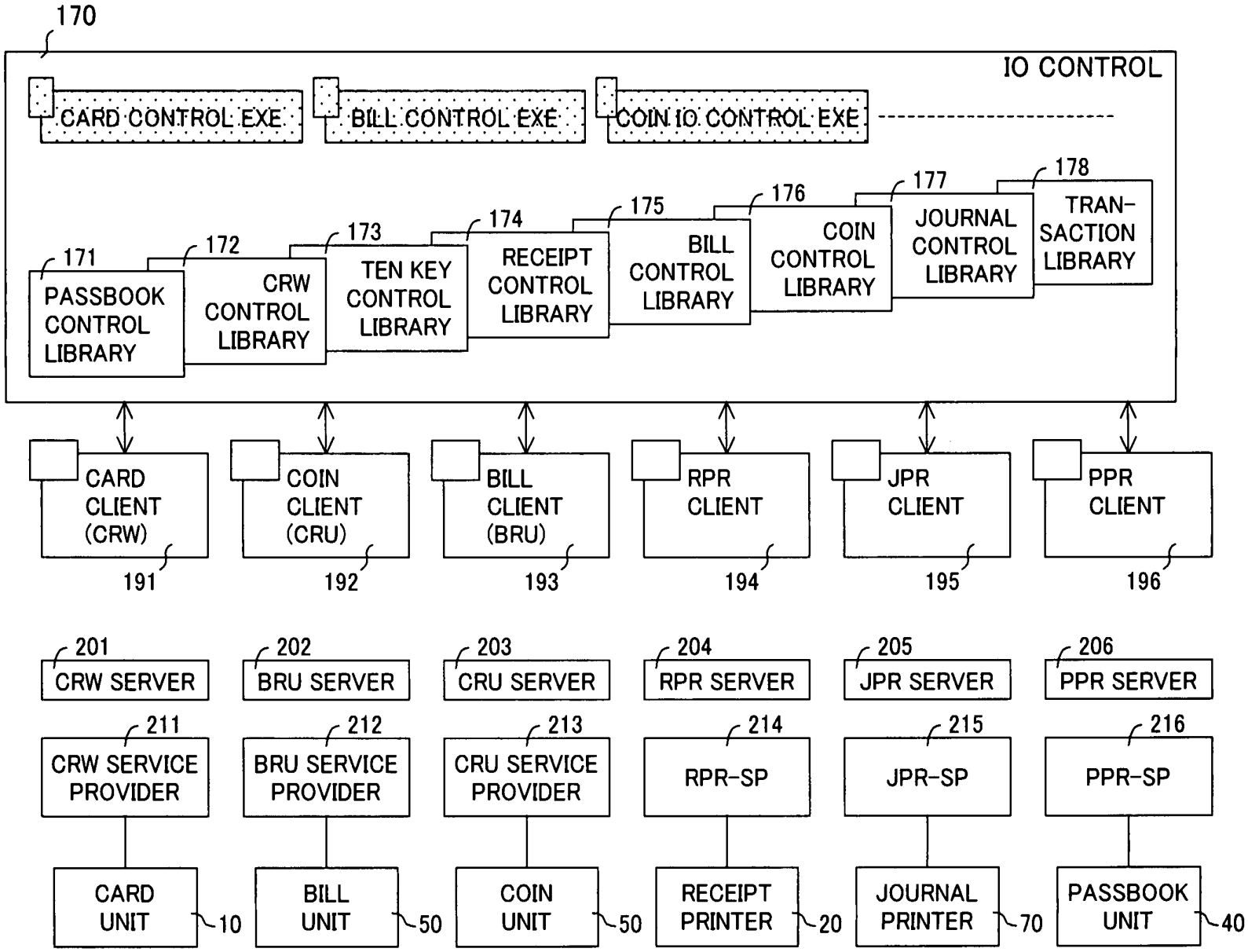

170
IO CONTROL
CARD CONTROL EXE
BILL CONTROL EXE
COIN IO CONTROL EXE
171
PASSBOOK CONTROL LIBRARY
172
CRW CONTROL LIBRARY
173
TEN KEY CONTROL LIBRARY
174
RECEIPT CONTROL LIBRARY
175
BILL CONTROL LIBRARY
176
COIN CONTROL LIBRARY
177
JOURNAL CONTROL LIBRARY
178
TRAN-SACTION LIBRARY
CARD CLIENT (CRW)
191
COIN CLIENT (CRU)
192
BILL CLIENT (BRU)
193
RPR CLIENT
194
JPR CLIENT
195
PPR CLIENT
196
201
CRW SERVER
202
BRU SERVER
203
CRU SERVER
204
RPR SERVER
205
JPR SERVER
206
PPR SERVER
211
CRW SERVICE PROVIDER
212
BRU SERVICE PROVIDER
213
CRU SERVICE PROVIDER
214
RPR-SP
215
JPR-SP
216
PPR-SP
CARD UNIT
10
BILL UNIT
50
COIN UNIT
50
RECEIPT PRINTER
20
JOURNAL PRINTER
70
PASSBOOK UNIT
40

FIG. 6

COMMAND TYPE	COMMAND
CRW COMMAND	CARD INSERTION
	CARD EJECT
RPR COMMAND	PRINT
	RELEASE
PPR COMMAND	PASSBOOK INSERTION
	PRINT
	MS WRITE
	PASSBOOK EJECT
	AUTO TURN PAGE
BRU COMMAND (CRU COMMAND)	INITIALIZATION
	ACCEPTANCE/COUNTING
	STORE
	DEPOSIT RETURN
	FEED
	RELEASE
	CAPTURE
	TRANSPORT PATH CHECK
	JAM RESET

FIG. 7

AGENT	METHOD	IO CONTROLLER								
		NONE	BILL	COIN	PAS BOOK	CARD	RECEIPT	JOURNAL	TRANS-ACTION	TEN KEY
SYNCHRONIZATION	INITIALIZE		●	●	●	●	●	●	●	●
	MECHANISM RESET		●	●	●	●	●	●		
	BILL/COIN INSERT		●	●						
	MEDIUM SIMULTANEOUS EJECT		●	●	●	●	●			
	PRINT/FEED/MS WRITE/EJECT PREPARE		●	●	●	●	●	●		
	DEPOSIT RETURN		●	●						
	STORAGE		●	●						
	FORCE-EJECT/CAPTURE		●	●	●	●	●			
	OBTAIN UNIT INFORMATION/SET TRANSACTION STATUS/TWO-SCREEN DISPLAY		●	●	●	●	●	●	●	●
	DEPOSIT/WITHDRAWAL PREPARE		●	●						
	FORCE REPLENISH		●	●						
	JAM RESET		●	●						
	CARD/PASSBOOK INSERT				●	●				
POST	POST PROCESS	●								
	POST DATA HOLD	●								
TEXT DISPLAY	FONT SET	●								
	TEXT DISPLAY	●								
	TEXT ERASE	●								

FIG. 8

AGENT	METHOD	IO CONTROLLER								
		NONE	BILL	COIN	PAS BOOK	CARD	RECEIPT	JOURNAL	TRANS-ACTION	TEN KEY
BILL CONTROL	RECEIPT/COUNTING		●							
	STORAGE		●							
	DEPOSIT RETURN		●							
	RELEASE		●							
	CANCEL		●							
PASSBOOK CONTROL	PRINT LINE SET/PAGE MARK READ				●					
	MS READ				●					
	AUTO TURN PAGE				●					
	PAGE CHECK AUTO TURN				●					
	SET PASSBOOK TYPE INFORMATION				●					
CARD CONTROL	CARD INSERT					●				
	CANCEL					●				
	MONEY TRANSFER CARD PRINT					●				
	MONEY TRANSFER CARD ISSUE					●				
	EJECT PREPARE					●				
RECEIPT CONTROL	REGISTER OVERLAY						●			
	EJECT PREPARE						●			
TRANSACTION CONTROL	SET TRANSACTION INFORMATION								●	
	MONITOR DEVICE STATUS								●	
	OBTAIN DEVICE STATUS								●	
	SET OSPERATION INFORMATION								●	
	CANCEL								●	
TEN KEY	TEN KEY INPUT START									●
	TEN KEY INPUT END									●

```
<HTML>
<HEAD>
<TITLE>WebATM Sample</TITLE>
</HEAD>

<BODY>

// SPECIFY AGENT WHICH IS CALLED UP IN THE SCREEN
<APPLET CODE="U_agtSync_.class" codebase = "http://webatm:8080/webatm"
        WIDTH="0" HEIGHT="0" NAME="U_agtSync" >
</APPLET>

// MAKE MAYSCRIPT DEFINITION SUCH THAT POSTAgent CALLS UP FUNCTION OF Java Script
<APPLET CODE="U_agtPost.class" codebase = "http://webatm:8080/webatm"
WIDTH="0" HEIGHT="0" NAME="U_agtPost" MAYSCRIPT>

<SCRIPT language="javascript">
<!--
                // DEFINE FUNCTION THAT IS CALLED UP FROM POSTAgent (REQUISITE)
                function postFunc(postData){ document.sys_form.ioResponse.value = postData;
                        window.document.sys_form.submit();
                }

                // CALL UP INITIAL METHOD IN SYNCHRONIZATION Agent
                ret = document.U_agtSync_.initial (inputParam, parseInt(postMode), parseInt(maxTimer));
                if (ret < 0) {
                        // ABNORMAL NOTIFY PROCESS
                        ~OMIT~
                }
// -->
</SCRIPT>
</BODY>
</HTML>
```

FIG. 9

FIG. 10

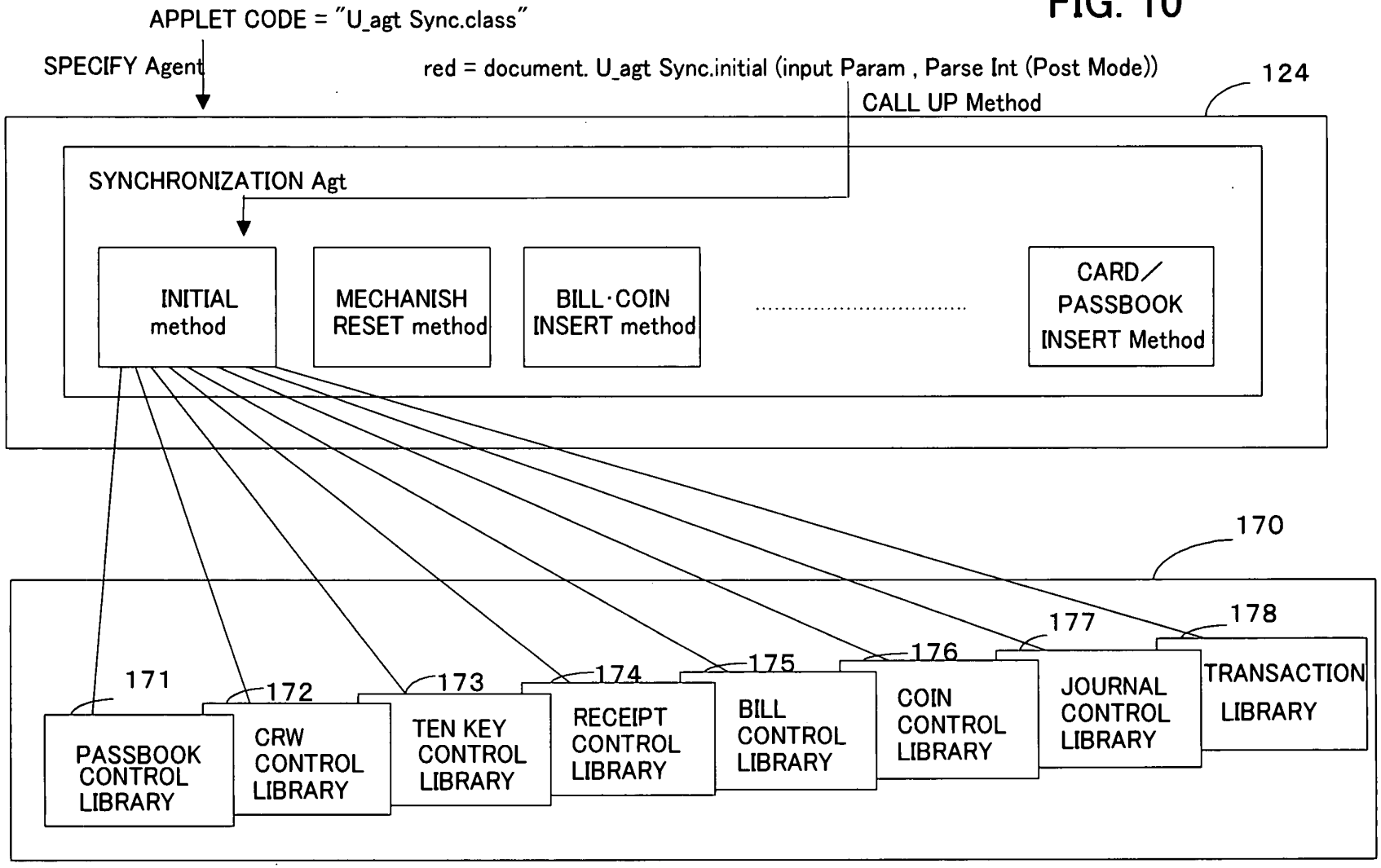
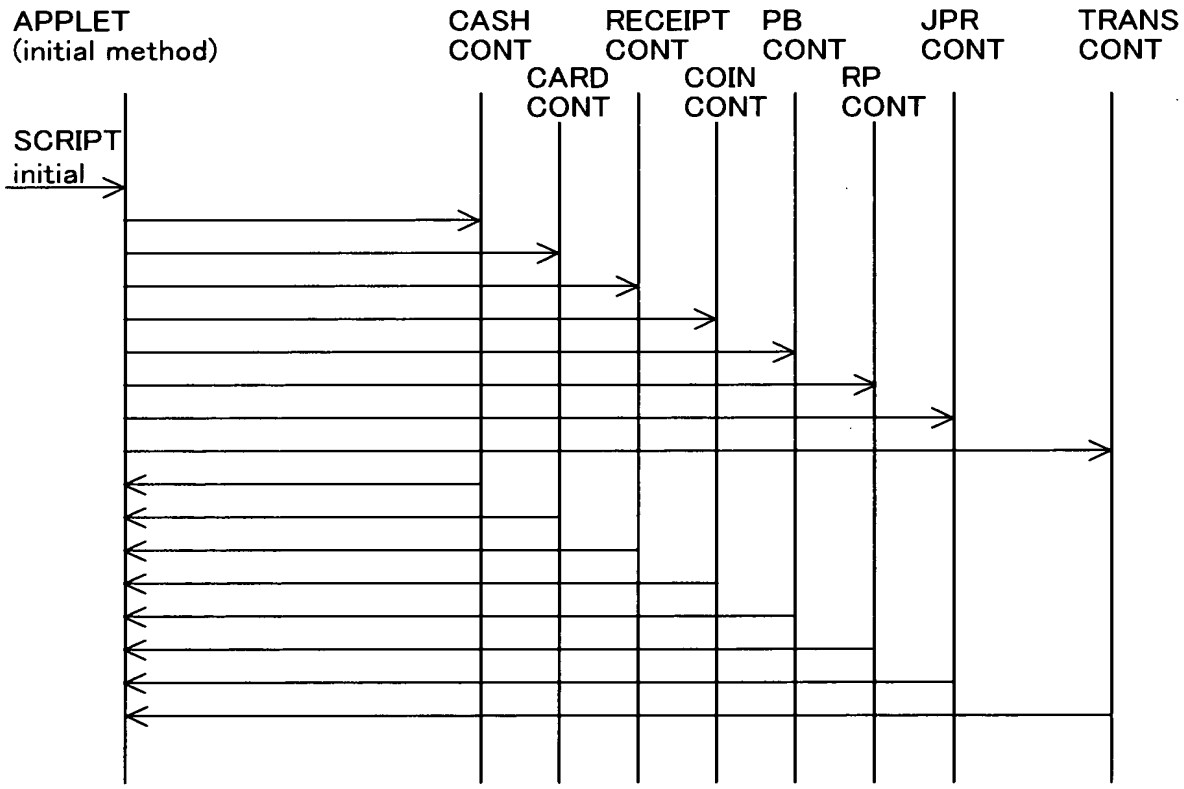

APPLET CODE = "U_agt Sync.class"
SPECIFY Agent
red = document. U_agt Sync.initial (input Param , Parse Int (Post Mode))
CALL UP Method
124
SYNCHRONIZATION Agt
INITIAL method
MECHANISH RESET method
BILL·COIN INSERT method
CARD/ PASSBOOK INSERT Method
170
171
172
173
174
175
176
177
178
PASSBOOK CONTROL LIBRARY
CRW CONTROL LIBRARY
TEN KEY CONTROL LIBRARY
RECEIPT CONTROL LIBRARY
BILL CONTROL LIBRARY
COIN CONTROL LIBRARY
JOURNAL CONTROL LIBRARY
TRANSACTION LIBRARY

FIG. 11

Input Param

1	1	1	1	1	1	1	1
BILL	COIN	PASSBOOK	CARD	RECEIPT	JOURNAL	TRANSACTION	TEN KEY

FIG. 12



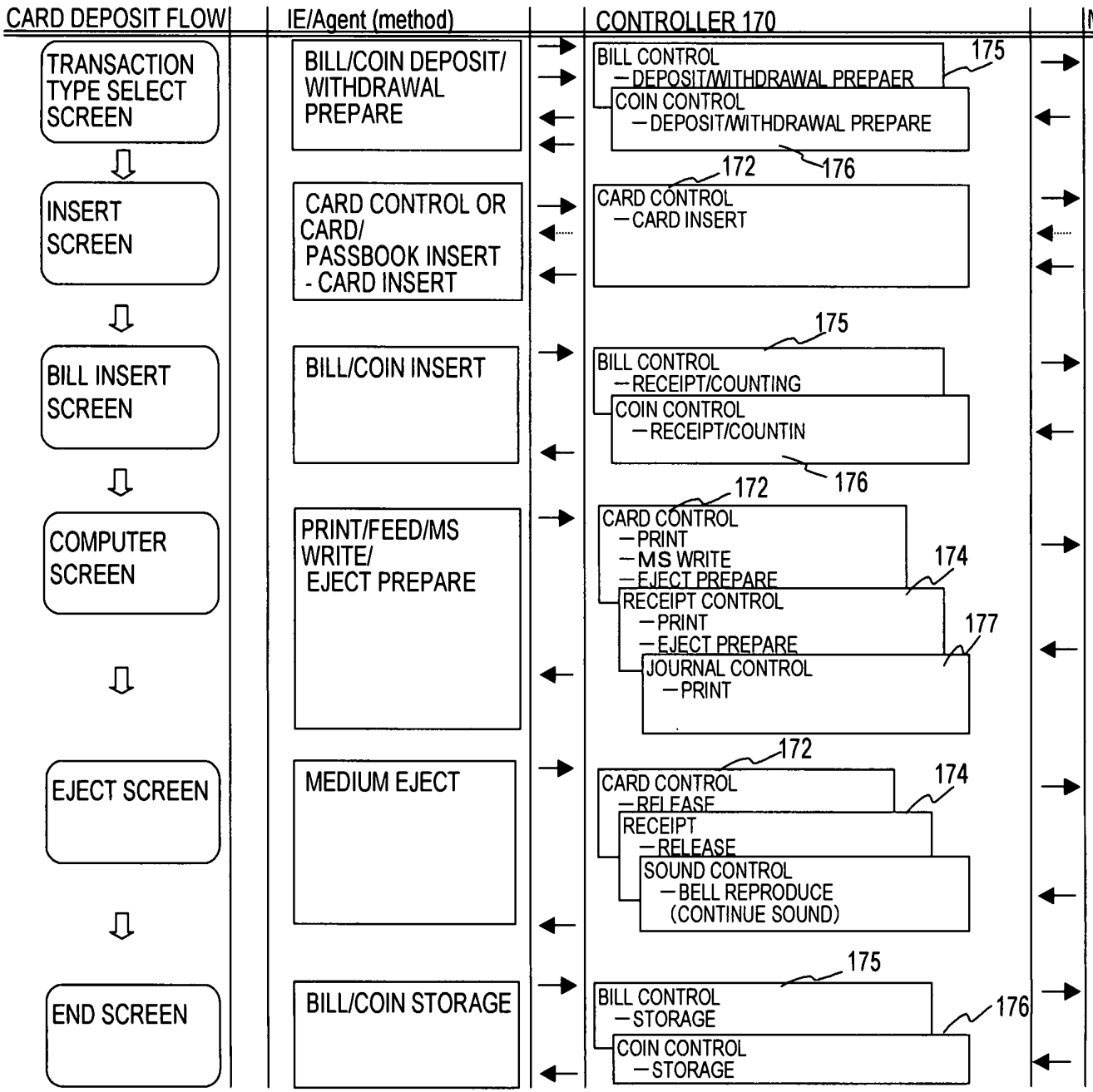

CARD DEPOSIT FLOW
IE/Agent (method)
CONTROLLER 170
MIDDLE 180
TRANSACTION TYPE SELECT SCREEN
BILL/COIN DEPOSIT/ WITHDRAWAL PREPARE
BILL CONTROL
—DEPOSIT/WITHDRAWAL PREPAER
175
COIN CONTROL
—DEPOSIT/WITHDRAWAL PREPARE
172
176
INSERT SCREEN
CARD CONTROL OR CARD/ PASSBOOK INSERT - CARD INSERT
CARD CONTROL
—CARD INSERT
BILL INSERT SCREEN
BILL/COIN INSERT
175
BILL CONTROL
—RECEIPT/COUNTING
COIN CONTROL
—RECEIPT/COUNTIN
176
COMPUTER SCREEN
PRINT/FEED/MS WRITE/ EJECT PREPARE
172
CARD CONTROL
—PRINT
—MS WRITE
—EJECT PREPARE
174
RECEIPT CONTROL
—PRINT
—EJECT PREPARE
177
JOURNAL CONTROL
—PRINT
EJECT SCREEN
MEDIUM EJECT
172
CARD CONTROL
—RELEASE
174
RECEIPT
—RELEASE
SOUND CONTROL
—BELL REPRODUCE
(CONTINUE SOUND)
END SCREEN
BILL/COIN STORAGE
175
BILL CONTROL
—STORAGE
176
COIN CONTROL
—STORAGE

FIG. 13

FIG. 14

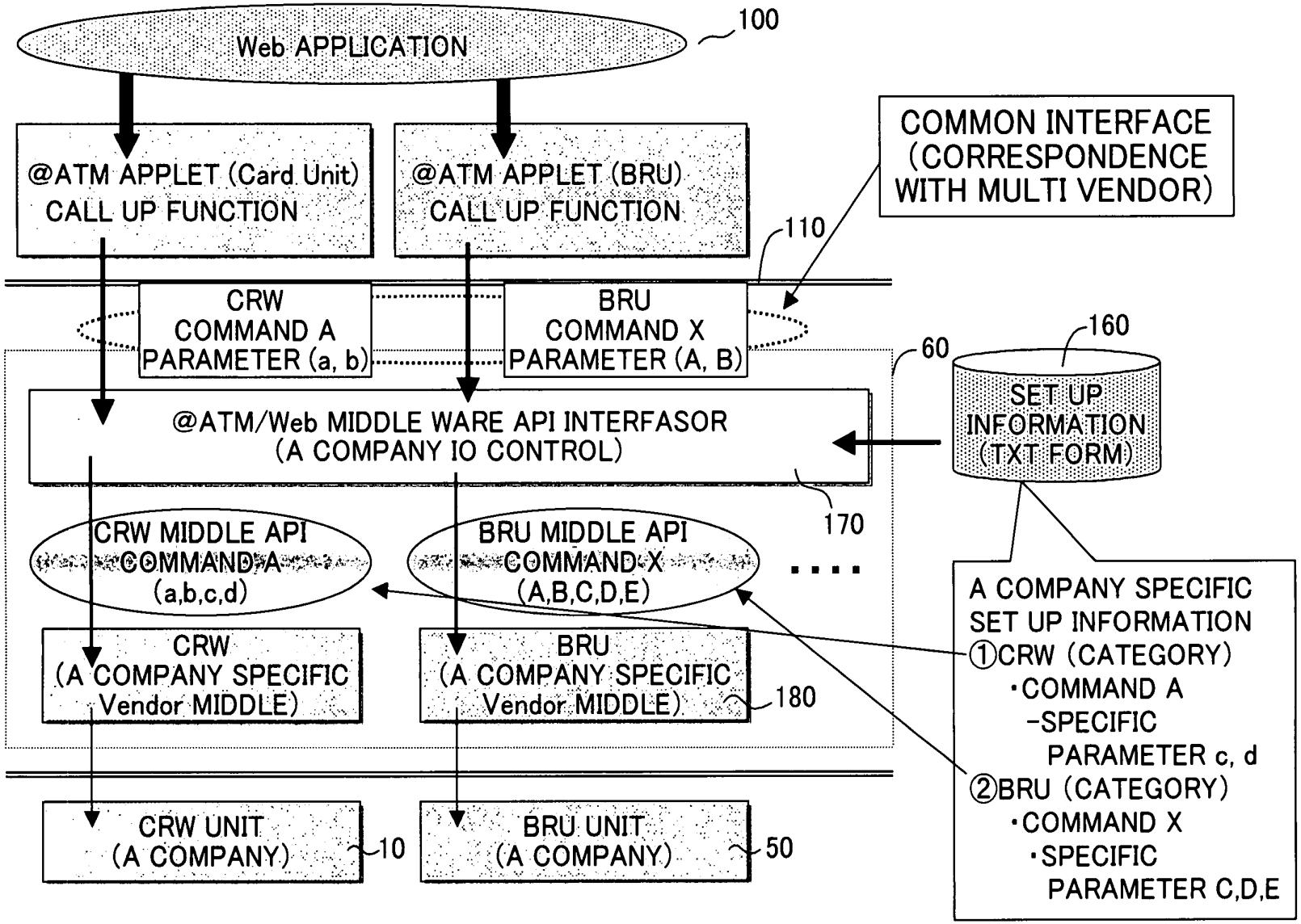

Web APPLICATION
100
@ATM APPLET (Card Unit)
CALL UP FUNCTION
@ATM APPLET (BRU)
CALL UP FUNCTION
COMMON INTERFACE
(CORRESPONDENCE
WITH MULTI VENDOR)
110
CRW
COMMAND A
PARAMETER (a, b)
BRU
COMMAND X
PARAMETER (A, B)
60
160
SET UP
INFORMATION
(TXT FORM)
@ATM/Web MIDDLE WARE API INTERFASOR
(A COMPANY IO CONTROL)
170
CRW MIDDLE API
COMMAND A
(a,b,c,d)
BRU MIDDLE API
COMMAND X
(A,B,C,D,E)
CRW
(A COMPANY SPECIFIC
Vendor MIDDLE)
BRU
(A COMPANY SPECIFIC
Vendor MIDDLE)
180
A COMPANY SPECIFIC
SET UP INFORMATION
①CRW (CATEGORY)
・COMMAND A
-SPECIFIC
PARAMETER c, d
②BRU (CATEGORY)
・COMMAND X
・SPECIFIC
PARAMETER C,D,E
CRW UNIT
(A COMPANY)
10
BRU UNIT
(A COMPANY)
50

FIG. 15

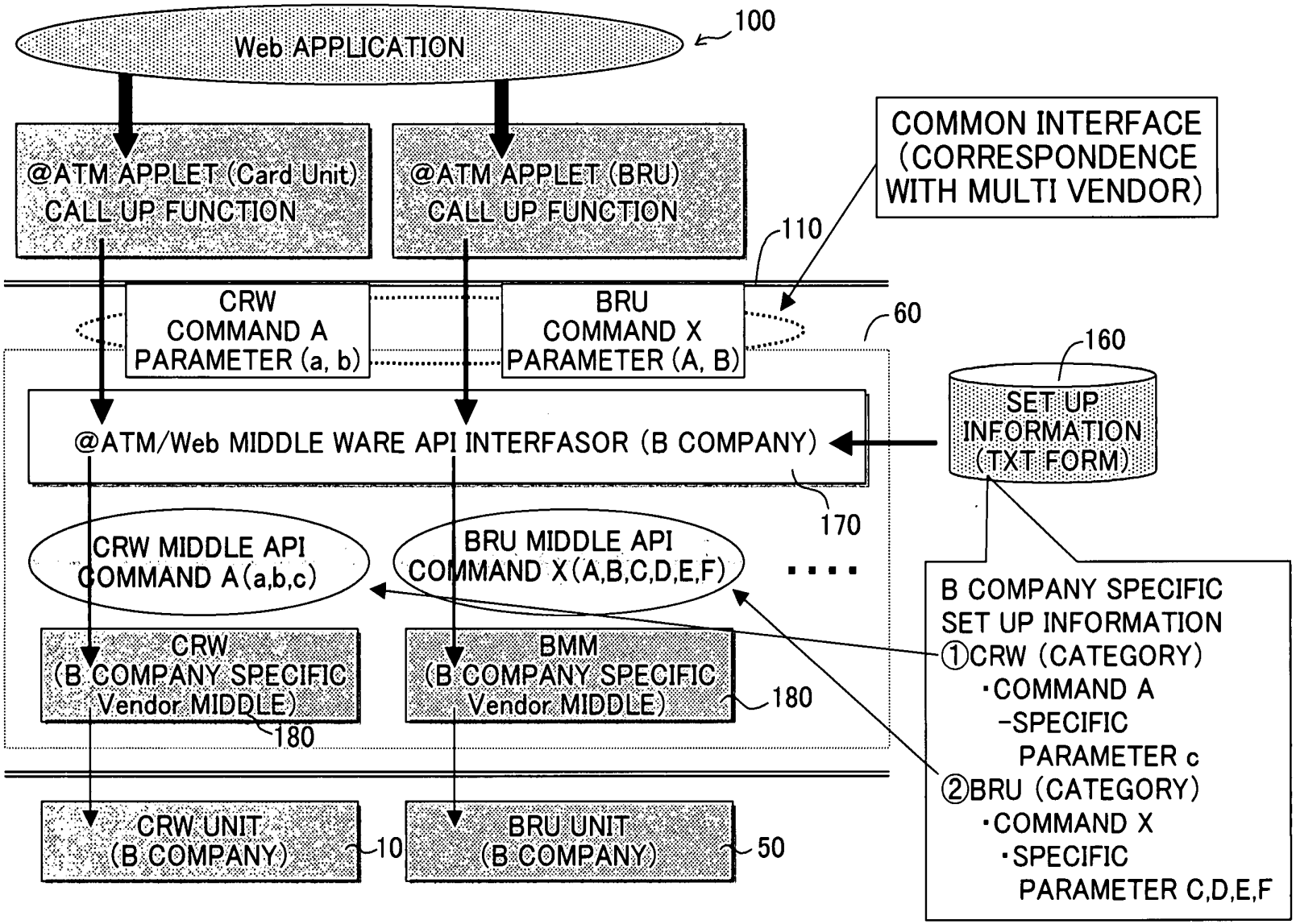

Web APPLICATION
100
@ATM APPLET (Card Unit) CALL UP FUNCTION
@ATM APPLET (BRU) CALL UP FUNCTION
COMMON INTERFACE (CORRESPONDENCE WITH MULTI VENDOR)
110
CRW COMMAND A PARAMETER (a, b)
BRU COMMAND X PARAMETER (A, B)
60
160
SET UP INFORMATION (TXT FORM)
@ATM/Web MIDDLE WARE API INTERFASOR (B COMPANY)
170
CRW MIDDLE API COMMAND A(a,b,c)
BRU MIDDLE API COMMAND X(A,B,C,D,E,F)
CRW (B COMPANY SPECIFIC Vendor MIDDLE)
180
BMM (B COMPANY SPECIFIC Vendor MIDDLE)
180
CRW UNIT (B COMPANY)
10
BRU UNIT (B COMPANY)
50
B COMPANY SPECIFIC SET UP INFORMATION
①CRW (CATEGORY)
・COMMAND A
-SPECIFIC PARAMETER c
②BRU (CATEGORY)
・COMMAND X
・SPECIFIC PARAMETER C,D,E,F

FIG. 16

ITEM	PROCESS	COMMON INTERFACE	VENDOR SPECIFIC INTERFACE
1	UNIT INITIALIZE PROCESS		PASSBOOK PRINTER USER TYPE CODE
2			PASSBOOK RIBBON NEAR END CHECK SPECIFICATION
3			PASSBOOK MS WRITE ERROR PAUSE SPECIFICATION
4			PASSBOOK PAGE MARK UP/DOWN USE SPECIFICATION
5			FORGOTTON PASSBOOK TAKE-IN/CLOSE SPECIFICATION
6	PASSBOOK INSERT PROCESS	INSERT MEDIUM LOGICAL TYPE SPECIFICATION	
7		PASSBOOK TYPE NO. SPECIFICATION	
8		W-MS CHANGE SPECIFICATION	
9		STRIPE POSITION SPECIFICATION	
10		MS ERASE SPECIFICATION	
11		SPECIFIED LINE POSITION SPECIFICATION	
12		COMPOSIT OPERATION SPECIFICATION	
13		CAMERA CONTROL SPECIFICATION	
14			MS POSITION
15			MS FORMAT
16			MS PARAMETER
17			LINE LAMP CONTROL DESIGNATION

FIG. 17

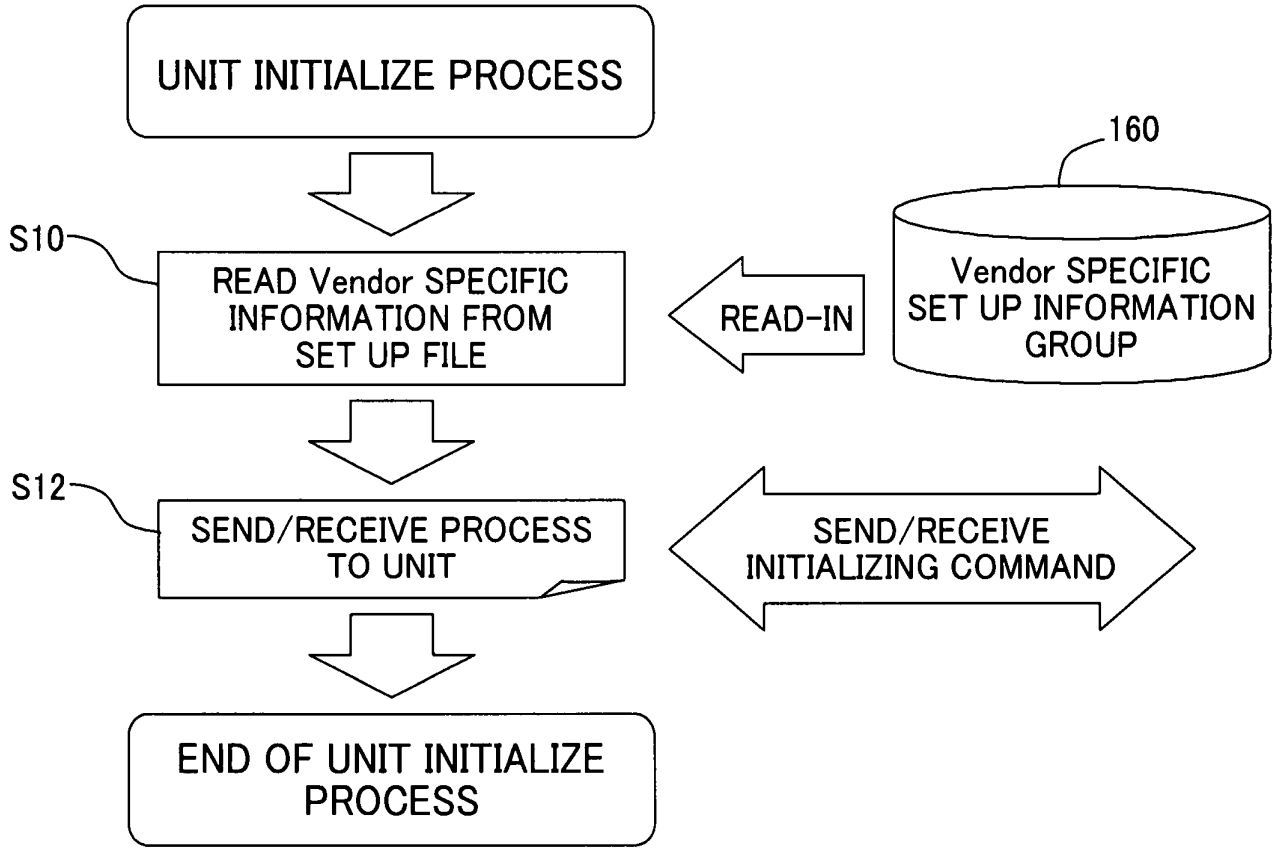

UNIT INITIALIZE PROCESS
160
S10
READ Vendor SPECIFIC INFORMATION FROM SET UP FILE
READ-IN
Vendor SPECIFIC SET UP INFORMATION GROUP
S12
SEND/RECEIVE PROCESS TO UNIT
SEND/RECEIVE INITIALIZING COMMAND
END OF UNIT INITIALIZE PROCESS

FIG. 18

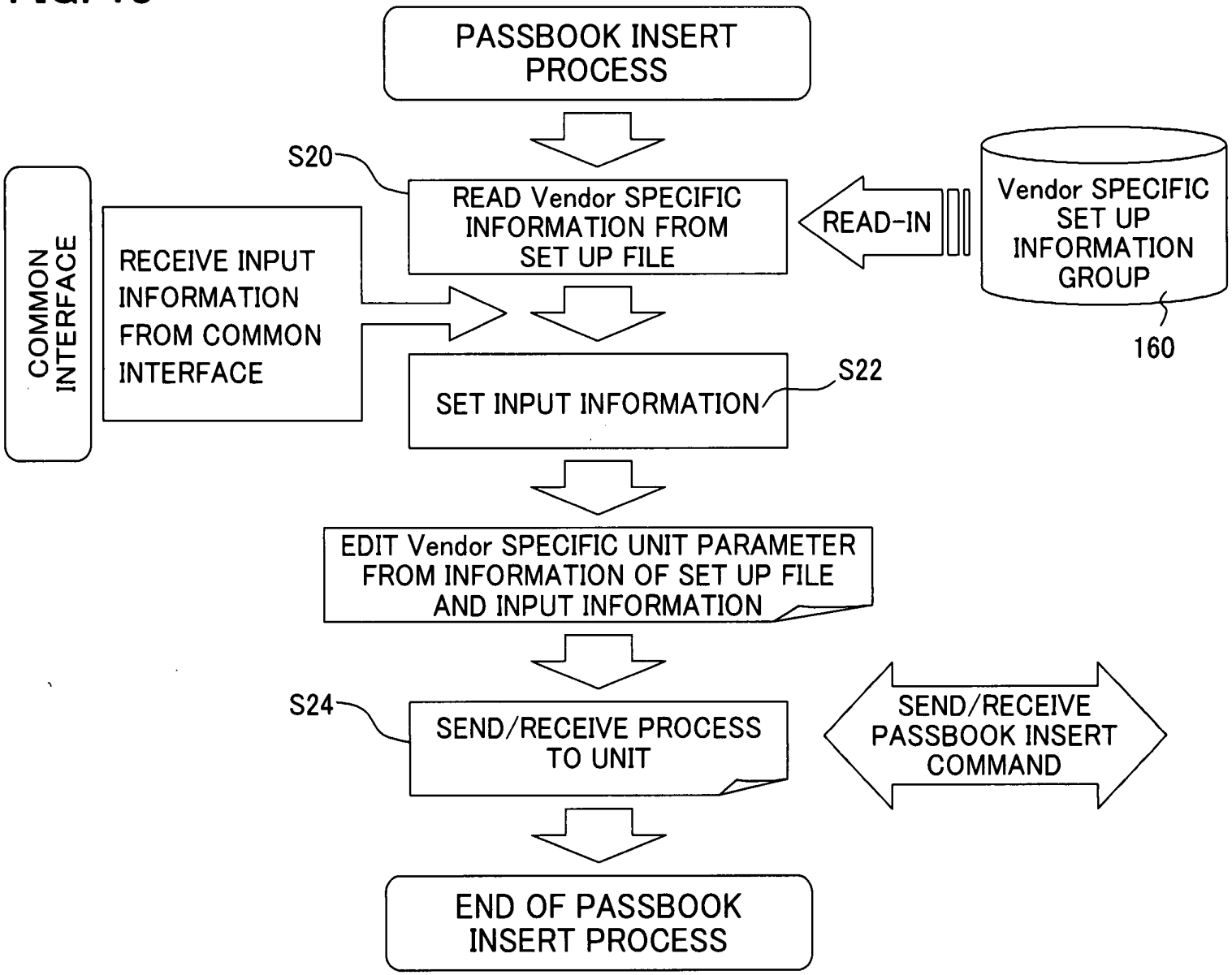

PASSBOOK INSERT PROCESS
S20
READ Vendor SPECIFIC INFORMATION FROM SET UP FILE
READ-IN
Vendor SPECIFIC SET UP INFORMATION GROUP
160
COMMON INTERFACE
RECEIVE INPUT INFORMATION FROM COMMON INTERFACE
SET INPUT INFORMATION
S22
EDIT Vendor SPECIFIC UNIT PARAMETER FROM INFORMATION OF SET UP FILE AND INPUT INFORMATION
S24
SEND/RECEIVE PROCESS TO UNIT
SEND/RECEIVE PASSBOOK INSERT COMMAND
END OF PASSBOOK INSERT PROCESS

FIG. 19

AGENT	METHOD	IO CONTROLLER								
		NONE	BILL	COIN	PAS BOOK	CARD	RECEIPT	JOURNAL	TRANS-ACTION	TEN KEY
SYNCHRONIZATION	INITIALIZE		●	●	●	●	●	●	●	●
SYNCHRONIZATION	MECHANISM RESET		●	●	●	●	●	●		
SYNCHRONIZATION	BILL/COIN INSERT		●	●						
SYNCHRONIZATION	MEDIUM SIMULTANEOUS EJECT		●	●	●	●	●			
SYNCHRONIZATION	PRINT/FEED/MS WRITE/EJECT PREPARE		●	●	●	●	●	●		
SYNCHRONIZATION	DEPOSIT RETURN		●	●						
SYNCHRONIZATION	STORAGE		●	●						
SYNCHRONIZATION	FORCE-EJECT/CAPTURE		●	●	●	●	●			
SYNCHRONIZATION	OBTAIN UNIT INFORMATION/SET TRANSACTION STATUS/TWO-SCREEN DISPLAY		●	●	●	●	●	●	●	●
SYNCHRONIZATION	CANCEL									
SYNCHRONIZATION										
SYNCHRONIZATION	DEPOSIT/WITHDRAWAL PREPARE		●	●						
SYNCHRONIZATION	FORCE REPLENISH		●	●						
SYNCHRONIZATION	JAM RESET		●	●						
SYNCHRONIZATION	CARD/PASSBOOK INSERT				●	●				
POST	POST PROCESS	●								
	POST DATA HOLD	●								
TEXT DISPLAY	FONT SET	●								
	TEXT DISPLAY	●								
	TEXT ERASE	●								

FIG. 20

```
<HTML>
<HEAD>
<TITLE>WebATM Sample</TITLE>
</HEAD>

<BODY>

// SPECIFY Agent WHICH IS CALLS UP IN THE SCREEN
<APPLET CODE="U_agtSync_initial.class" codebase = "http://webatm:8080/webatm"
        WIDTH="0" HEIGHT="0" NAME="U_agtSync_initial" >
</APPLET>

// MAKE MAYSCRIPT DEFINITION SUCH THAT POSTAgent CALLS UP FUNCTION of JavaScript
<APPLET CODE="U_agtPost.class" codebase = "http://webatm:8080/webatm"
        WIDTH="0" HEIGHT="0" NAME="U_agtPost" MAYSCRIPT>

<SCRIPT language="javascript">
<!--
        // DEFINE FUNCTION THAT IS CALLED UP FROM POSTAgent (REQUISITE)
        function postFunc(postData){ document.sys_form.ioResponse.value = postData;
        window.document.sys_form.submit();
        }

        // CALL UP INITIAL METHOD IN SYNCHRONIZATION Agent
        ret = document.U_agtSync_initial.initial (inputParam, parseInt(postMode), parseInt(maxTimer));
        if (ret < 0) {
                // ABNORMAL NOTIFY PROCESS
                 ~OMIT~
        }
// -->
</SCRIPT>
</BODY>
</HTML>
```

FIG. 21 PRIOR ART

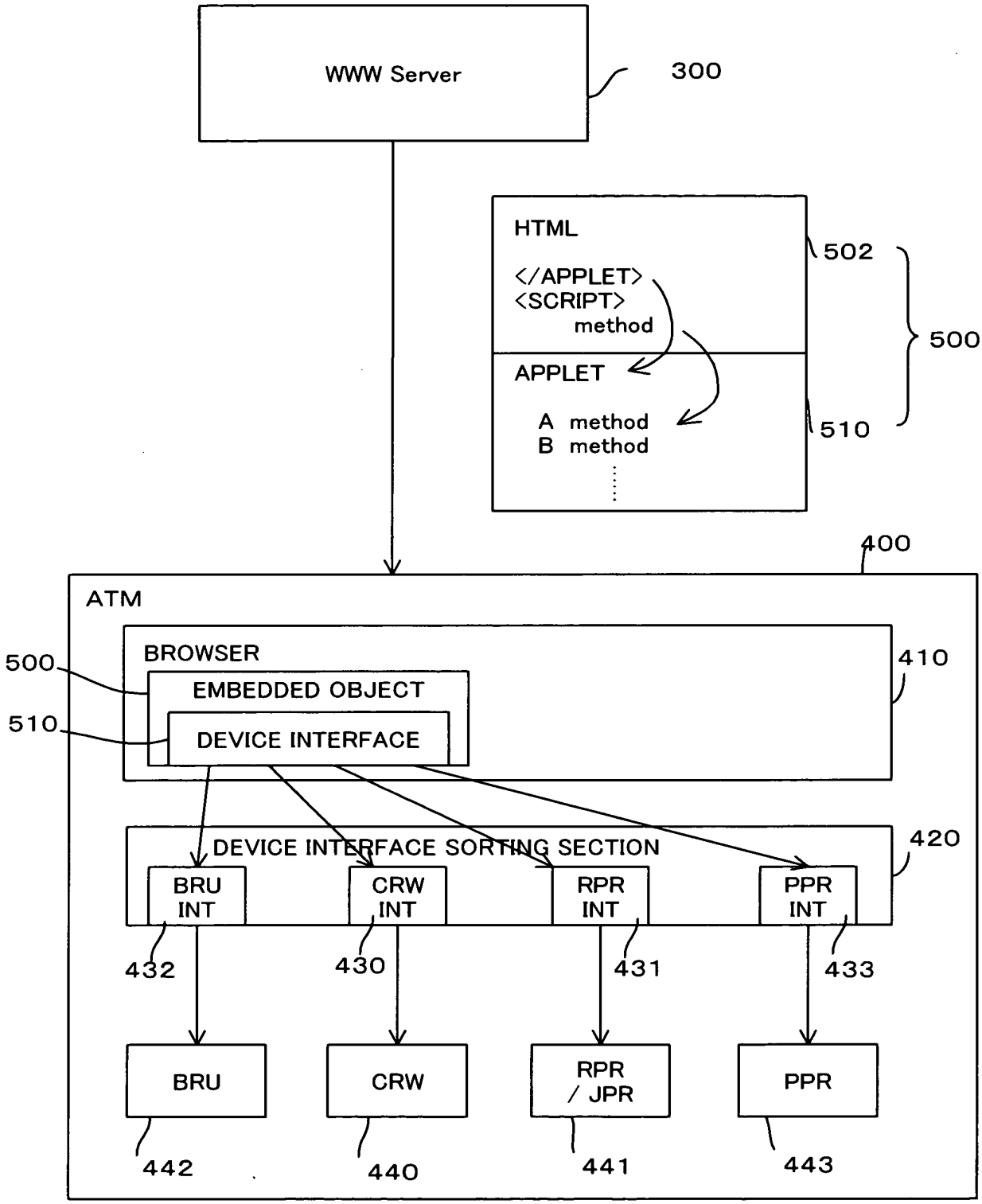
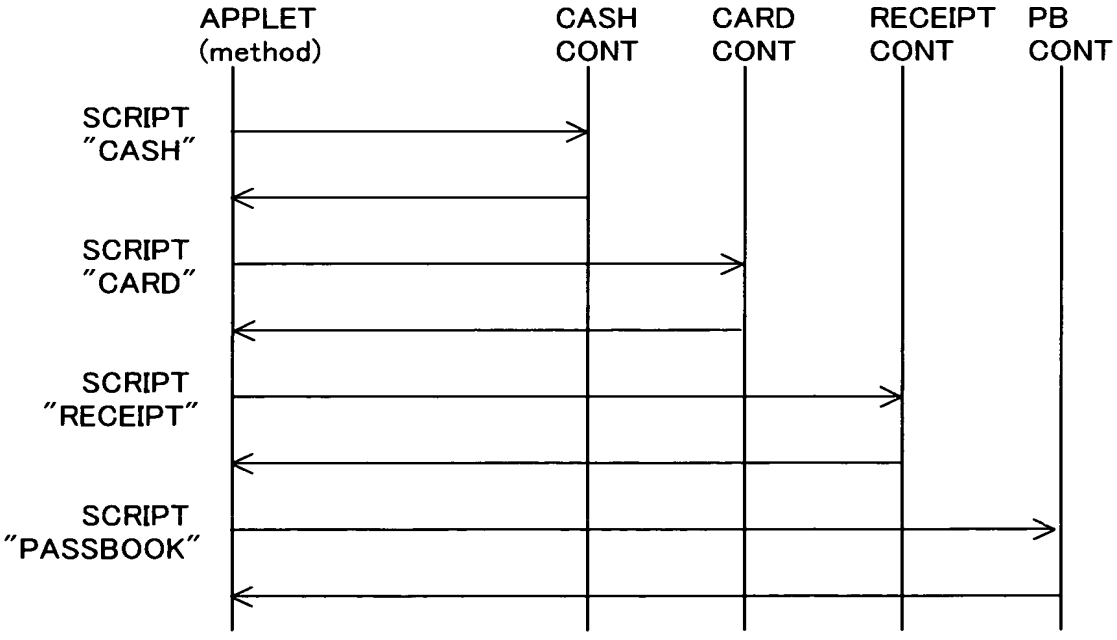


FIG. 22

PRIOR ART

```
<HTML>
(PROGRAM DISCRIPTION OF SCREEN IMAGE) OMIT
<applet code=MachineIF.class codebase=MachineIF id=IDMachinesIF>
</applet> ····· (D 1)
<script>
// INITIALIZE EACH DEVICE
FunctionInitialize{
        IDMachineIF. Initialize("Cash");
        IDMachineIF. Initialize("Card");
        IDMachineIF. Initialize("Receipt");
        IDMachineIF. Initialize("Passbook");
}
</script>
(PROGRAM DISCRIPTION OF SCREEN IMAGE) OMIT
</HTML>
```

FIG. 23

PRIOR ART